might as well include the mountains in the moon — for there is no one to dispute it) are composed of hard, silicious rocks. Notably are volcanic mountains included in this category: for example, the Sierra Nevadas, and the volcanic mountains of the Pacific coast, as well as those of Europe and Asia. Another inference I would like to make in this connection is this: that all mountain-peaks as seen to-day, are but fragmentary remains of what were once vast elevated plateaus, or long, massive elevated ridges, worn away by the tooth of time, and the present peaks are only the survival of the hardest, while the softer parts it may be have long since disappeared in the bottom of the ocean.

2d. The mission of the dykes, thrust up as they are through the vast seams of lignite coal — and many of these dykes have, no doubt, never reached the surface — is to mineralize the coal, or make it ready for the coke oven and furnace, as well as the coal grate, in the habitation of man: for example, the coal mines of Trinidad and vicinity, as well as those immense seams of coal near Walsenberg, on the way to Veta Pass. Otherwise these coal seams would have been only black carbonaceous dust, like the coal now quarried in our Dacotah in Russell county, along the Republican river, and also in many coal seams east of the mountains in Colorado.

3d. The lesson of metamorphism, which is a very important one to the geologist. This is seen illustrated upon the west peak, where its entire surface of soft sandstone is changed to hard quartzite; and still further it is seen all along the line of the dykes, which came up hot and changed the adjoining sandstone into quartzite for a few feet only, when it fades out into its original softness, and is thus weathered into steep cliffs all along the dykes, peaks which now dot all the surrounding country.

NOTES ON SOME KANSAS MINERAL WATERS.

BY PROFESSOR G. H. FAILYER, STATE AGRICULTURAL COLLEGE.

Some years since, a farmer living in the eastern part of Riley county, this State, in prospecting for coal, drilled to a depth of 120 feet; then abandoned this boring and began another one something over 100 yards distant from the first. In the meantime the water had risen to within four feet of the surface. A four-feet ditch was dug; from this the water flows at a rate which the farmer estimates, by measuring the flow during a short period, at 800 gallons per hour. At the depth of 85 feet the second well began to flow from the top, giving a stream, I am informed, 1¼ inches in diameter. The boring was continued to a depth of 180 feet. The water ceased to flow from the well, but a ditch two or three feet deep permitted the water to escape again. The capacity of the well is now 200 gallons per hour. Analysis of the waters of these wells gave the following results:

No. 1.	*Grams per litre.*	*Grains per U. S. gallon.*
Calc. oxide (as bicarb.*),	.090295	5.2766
Calc. oxide (not carb.),	.553883	32.3673
Mag. oxide,	.096792	5.6561
Iron oxide (as bicarb.),	.004101	.2426
Sodium,	.008699	.5183
Sulphuric acid (SO_3),	1.050101	61.3651
Chlorine,	.025060	1.4644
Silica,	.172785	10.0968
No. 2.		
Calc. oxide (as bicarb.*),	.103945	6.0746
Calc. oxide (not carb.),	.251383	14.6900

* Combined and free carbonic acid not determined.

Mag. oxide,	.112643	6.5824
Iron oxide (as bicarb.),	.005464	.3192
Sodium,	.014798	.8648
Potassium,	Trace	Trace
Lithium,	Trace	Trace
Sulphuric acid (SO_3),	.566664	33.1141
Chlorine,	.030788	1.7993
Silica,	.020285	1.1851

The water from a well drilled last spring in the southeastern part of Davis county was recently analyzed in our laboratory with the following result:

	Grams per litre.	*Grains per gal.*
Calcium oxide (as bicarb.),	.1328	7.7605
Magnesium oxide (as bicarb.),	.00764	.4465
Calcium oxide (not carb.),	.14843	8.6739
Magnesium oxide (not carb.),	.16634	9.7205
Lithium,	Trace	Trace
Sodium,	.05317	3.1017
Ferrous oxide (as bicarb.),	.00333	.1946
Alumina,	.02410	1.4083
Hydrogen sulphide (free),	.03375	1.9620
Hydrogen sulphide (combined),	.00850	.4967
Sulphuric acid (SO_3),	.64117	37.4683
Chlorine,	.01377	.8047
Phosphoric acid,	Trace	Trace
Iodine,	Trace	Trace
Boric acid,	Trace	Trace
Carbonic acid (combined),	.01884	6.5886
Silica,	.01502	.8774

Free carbonic acid not determined.

The well is 80 feet deep. The owner of the well states, that at a depth of about 60 feet a blowing noise was heard in the well, as though a cavity containing compressed gas had been tapped. He does not remember to have observed the odor of hydrogen sulphide at this time. The noise may have been due to the escape of this gas, but it does not seem probable.

In giving the analytical results, I have preferred to give the substances found, without combining them. Except in those cases where the compound may be precipitated by boiling, as in the case of the carbonates, only a shrewd guess can be made regarding the combination of the bases and the acids in such complex and dilute solutions.

[The following paper was received too late for a place upon the programme, but is here inserted as properly belonging to the proceedings of this meeting. It appears as received by Professor W. A. Kellerman, at whose request it was written.—SECRETARY.]

A CONTRIBUTION TO THE FLORA OF KANSAS—GRAMINEAL.

(With Plates I, II and III.)

BY F. LAMSON SCRIBNER.

TO PROF. W. A. KELLERMAN: I have examined the Kansas grasses contained in the package recently received from you, and I present herewith my determinations of the species. They are for the most part widely distributed in this country, and all save two of the genera—Chloris and Munroa—are described in Gray's Manual. Nearly double the number of species of grasses here enumerated probably occur within the limits of your State. The list is arranged according to the classification in Bentham and Hooker's Genera Plantarum.

8 and 30. Paspalum setaceum, Mx., Fl. l. 43; Nutt. Fl. Ark. 145; Gray's Man. 645; No. 802 of E. Hall's Texan collection.